CONTENTS

- vii List of participants
- Oral presentations XXV
 - Editorial
 - Editorial note
 - Report on the Meeting of the International Nuclear Track Society (INTS)

OPENING LECTURE

P. B. PRICE

9 Advances in solid state nuclear track detectors

TRACK FORMATION

- O. A. BERNAOLA, G. SAINT-MARTIN and
- C. GRASSO
- 25 Detection threshold in polymers
- L. T. CHADDERTON, S. A. CRUZ and D. W. FINK
- 29 Theory for latent particle tracks in polymers

M. DANZIGER

- 39 New results on the description of the etching process in polymers irradiated with heavy ions and the systematics of pore opening with the help of the model of low-energy excitations
- K. K. DWIVEDI, S. GHOSH and J. RAJU
- 45 Registration threshold for tracks of 40Ar ions in muscovite mica
- K. K. DWIVEDI, Zs. KOCSIS, P. VATER and
- R. BRANDT
- 47 Mean ranges of 209Bi ions in ZnP-glass detector
- D. FINK, L. T. CHADDERTON and A. SCHMOLDT
- 51 Irradiation of PMMA with high energy light ions: the depth distribution for volatile reaction-product emission
- K.-O. GROENEVELD and M. SCHOSNIG
- 53 Particle penetration through frozen gases
- Zs. Kocsis, K. K. Dwivedi, P. Vater and
- R. BRANDT
- 63 Submicroscopic nuclear track theory and the charge changing

61 Track lengths of 11.4 MeV/N 20Ne ions in CR-39

R. MAZZEI

- 65 Track formation by release of lattice energy
- F. M. RUSSELL and J. W. STEEDS E. SCHOPPER and B. BAICAN
- Hollow tracks of heavy ions in AgCl(Cd) detectors—contribution to the radial profile of the action of charged particles in solids

J. U. SCHOTT

- 73 Time resolving detector systems: charge coupled devices in studies of single particle events
- S. K. SHARMA, S. KUMAR and A. P. SHARMA
- 81 Stopping power and range of relativistic and non-relativistic heavy ions in different materials including solid state nuclear track detectors
- TANG XIAOWEI and ZHAI PENGJ
- 85 Scanning tunneling microscopy study of heavy ion tracks and a latent track nuclear detector
- B. Žižić, J. B. Vuković and M. Mijić
- 89 The nucleation and growing of AgBr microcrystals as a function for making the sensitivity and the latent image centres produced by ionizing particles

TRACK DEVELOPMENT

- P. Yu. APEL, A. Yu. DIDYK, L. I. KRAVETS, V. I. KUZNETSOV and B. I. FURSOV
- 93 Registration temperature effect in polypropylene detectors
- P. YU. APEL, V. I. KUZNETSOV, V. G. LUPPOV, A. V. LEVKOVICH, V. A. ALTYNOV and
- 97 Effects of atomic hydrogen on polymeric track detectors

O. L. ORELOVICH

C. S. CHONG, M. A. C. CHAN and L. F. TAN 101 The effect of X-ray irradiation on track formation in LR-115 Type II track detector V. A. DITLOV 105 Local response of sensitive microregion in solid state track detectors as a visualization result of some part of its physical states G. ESPINOSA 113 Development in the instrumentation for counting and analysis of particle tracks in solids G. ESPINOSA, L. V. RODRIGUEZ, J. I. GOLZARRI 117 Nuclear tracks in sinterized gemstones and V. M. CASTAÑO G. ESPINOSA, A. MARTENEZ and J. I. GOLZARRI 119 Shrimp shells as nuclear track detector Optimization of electrochemical track etching for alpha particle G. M. HASSIB and H. A. AMER 121 spectrometry G. M. HASSIB and H. A. AMER 125 On the sparkable region phenomena in electrochemical etching L. L. KASHKAROV, S. V. STOVBUN and 129 Track parameters for the accelerated 20Ne ions in the new CZ-type V. P. PERELYGIN solid state track detector 131 Track treeing mechanism and its application LI BOYANG LIU YONGLIAN, HAN JINQIN and 143 Study on the latent image stability of nuclear emulsion LIU HUICHANG R. MAZZEI 145 Submicroscopical nuclear track kinetic theory 149 V_T (track etch rate): reflection of total energy-loss rate (dE/dx) for ²³⁸U in CR-39 J. RAJU and K. K. DWIVEDI R. SHWEIKANI, S. A. DURRANI and 153 Effects of gamma irradiation on the bulk and track etching T. TSURUTA properties of cellulose nitrate (Daicel 6000) and CR-39 plastics N. P. SINGH 157 A study of the characteristics of microstructures of ²³⁸U in CR-39 M. SOHRABI and M. KATOUZI 161 Discovery of a new ECE parameter affecting the response of polymer track detectors M. SOHRABI and SH. MAHDI 165 A "quick DYECET" method for ECE particle tracks in polymer detectors M. SOHRABI and M. SADEGHI 171 Discovery of some phenomena in polycarbonate detectors by a novel triplet ECE technique S. C. WANG and P. B. PRICE 183 Etching characteristics of phosphate glass track detector TRACK OBSERVATION, DETECTORS F. ABU-JARAD 189 A comparison between SR-90 and two types of CR-39 nuclear track detectors M. I. AL-JARALLAH, F. ABU-JARAD, 191 Investigation of proton response of CR-39 A. B. HALLAK, A. COBAN and M. ISLAM 195 Characterization of a nuclear track detector response by microto-A. CHAMBAUDET, D. KLEIN, F. BERGER and C. DUBOIS pography observations and image analysis DENG XINLU, ZHANG GOUBING and 197 A computerized spark counter ZHANG LIANSHENG M. Fujii, T. Asari, R. Yokota, T. Kobayashi 199 Ageing effects on a new polymeric track detector SR-90 and a and H. HASEGAWA model of the nuclear track formation E. GANBAUGE 205 A new apparatus for track-analysis in nuclear track emulsion based on a CCD-camera device G. JÖNSSON and R. HELLBORG 213 Low energy heavy ions registered by plastic films Zs. Kocsis and R. Brandt 215 Sensitivity study of Hungarian made CR-39 for heavy ion track

Luo Yisheng, Tao Deyuan, He Xiaohai, Zhao Ying and Chen Di	217	Automated image analysis system for etched track counting—a preliminary study
P. MEOLI, R. MAZZEI and O. A. BERNAOLA	219	Submicroscopic observation of fission product tracks in mica
DE-LING PANG, LAN-DI LI and BIN ZHU	221	Optimization of dopants in CR-39
M. Rebetez, D. Petit, R. Nicot, M. Grivet, N. Ben Ghouma and A. Chambaudet	225	Version 3.0 "ATOM" software with built-in motorized stage control for optical microscopy analysis of nuclear tracks
L. SINGH, J. SINGH, S. SINGH and H. S. VIRK	229	Recovery stages of heavy ion produced defects in quartz crystal
HANCHENG SUN	233	Nuclear emulsion in China
H. S. Virk	243	Heavy ion ranges in plastic track detectors
H. S. VIRK, R. KAUR and G. SINGH	245	Heavy ion ranges in glass detectors
J. B. Vuković and R. Antanasijević	249	CR-39 imaged by atomic force microscope
	ADON	MEASUREMENTS
F. ABU-JARAD, S. M. A. DURRANI and		Effect of 10.6 µm pulsed laser on the CR-39
M. A. Islam	233	Effect of 10.0 µm pulsed laser on the CR-39
F. Abu-Jarad and M. A. Islam	257	A passive radon detector survey in a three-story laboratory building
D. Azimi-Garakani	259	An intercomparison of different passive radon detectors
D. Azimi-Garakani	263	A comparison of seasonal radon concentration and weekly screening measurements
I. BADR and S. A. DURRANI	267	Combining nested and linear sampling for determining the scale and form of the spatial variation of soil radon in the Midlands area of England
M. Balcazar, E. Gonzalez, M. Ortega and J. H. Flores	273	Geothermal energy prospecting in El Salvador
R. Barillon, S. Violette, E. Nicolini, D. Klein, A. Chambaudet, J. P. Carbonnel, M. J. Heath and J. Merefield	277	Continuous measurements of radon content in groundwater on the volcanic site of "Piton de la Fournaise" (Island of Reunion, France)
R. Barillon, D. Klein, A. Chambaudet and C. Devillard	281	Comparison of effectiveness of three radon detectors (LR115, CR39 and silicon diode pin) placed in a cylindrical device—theory and experimental techniques
W. BIRKHOLZ and TH. KLINK	283	Measurements of radon concentrations in dwelling houses
J. Borau, A. Gonzalez, G. Espinosa and J. I. Golzarri	287	Measurements of radon levels inside Mexican caves
A. CHAMBAUDET, V. PAUTOV, D. KLEIN and G. BARENBOIM	289	Features of a new Russian track detector for radon measurement
A. CHÁVEZ, B. CERVANTES and M. BALCÁZAR	291	Radon diffusion through thin plastics
CHEN LING	293	The measurement of equilibrium factor for radon by SSNTD
T. CHITTRAKARN, R. BOONNUMMAR, T. PONGSUWAN, P. NUANNIN, S. ARRYKUL, P. POEMTHONG and C. KAEW-ON	297	Lignite and tin ores exploration in southern part of Thailand by using nuclear track-etch detectors
S. A. Durrani	303	Radon as a health hazard at home: what are the facts?
S. A. EL-FIKI, M. A. SHARAF, H. M. EISSA, M. L. ABD EL-HADY, M. A. KENAWY and M. A. EL-FIKI	319	The design of a radon calibration chamber for testing radon measuring dosimeters

S. A. El-Fiki, M. A. Kenawy, H. M. Eissa, M. A. Sharaf, M. A. El-Fiki and M. L. Abd El-Hady	323	CR-39 and LR-115 as a secondary standard dosimeter for radon dose calibration
S. A. EL-FIKI, H. M. EISSA and M. L. ABD EL-HADY	327	Intercomparison measurements of radon concentration using secondary standard radon chamber
G. Espinosa, J. I. Golzarri and R. B. Gammage	329	Comparative studies of polymer materials as radon protection coating
S. M. Farid	331	Measurement of concentrations of radon and its daughters in indoor atmosphere using CR-39 nuclear track detector
FENG YUSHUI, MENG WENBIN and QIN CHANGZHU	335	Evaluation of solid state nuclear track detectors for radon measurement
G. M. Hassib, M. I. Hussein, H. A. Amer and E. Piesch	341	Assessment of radon concentration in Egyptian dwellings by using a passive technique
J. Heinicke and U. Koch	345	Experiences with radon measurements for earthquake prediction and landslides
G. Jönsson	347	Statistics and error considerations at the application of SSNTD-technique in radon measurement
N. A. KARAMDOUST, H. AFARIDEH and P. HATAMI	351	Radon measurement in dwellings around the hot spring in the north west of Iran
H. A. Khan	355	Usefulness of radon measurements in earth sciences
D. Klein, N. Roudko, A. Chambaudet and S. Malakhov	365	Nuclear track detectors for radon monitoring in coal mines in the Kouzbass Siberian region (Russian confederation)
D. KLEIN, C. DEVILLARD, A. CHAMBAUDET and R. BARILLON	369	Development of measuring techniques using a silicon diode pin detector for continuous radon monitoring
Li Xianjie, Zhou Jianliang and Qiu Shoukang	373	The first national intercomparison of radon integrating detectors in radon chamber
Lu Wei	379	Use of SSNTD to study environgeology of carcinogen radon in Gejiu area
Lu Yangqiao and Feng Yushui	383	Measurement of airborne radon concentration in air-conditioned building by using SSNTD
Lu Zuhui, Wang Yujin, Chen Dongrong, Li Youming, Xu Aijun and Yang Fuxing	387	Prospecting oil and gas deposits with CR-39 detectors
$R.\ H.\ Mahat,\ A.\ Ali,\ K.\ M.\ Zin,\ Y.\ M.\ Amin and\ L.\ Omar$	393	Passive measurement of radon emanation rate from the soil
MATIULLAH, A. BASHIR, K. KUDO and X. YANG	395	Radon measurements in some houses of Tsukuba Science City, Japan
MATIULLAH, A. BASHIR, X. YANG and A. AHMAD	399	Recent studies on radon—a measure of living standard
M. Monnin, JP. Morin and JL. Seidel	403	A comprehensive approach of radon measurements for geophysical studies
JP. MORIN, JL. SEIDEL and M. MONNIN	413	An automatic electronic counter for short term radon measurements in soil and/or water
JP. Morin, JL. Seidel and M. Monnin	415	A tri-dimensional model for radon transport in a porous medium
DE-LING PANG	419	The advancement of solid state nuclear track technique for radon monitor
De-Ling Pang, Zhi-Xin Zhou, Lan-Di Li and Bin Zhu	423	An integrating concentration radon calibration chamber
R. W. POLLOCK	427	Presoak studies with CR-39 and Lexan

xviii

A. A. Qureshi, G. Hussain, K. Mahmood, M. A. S. Baig and H. A. Khan	431	Use of alpha sensitive plastic film (ASPF) technique to locate the re-mobilized uranium ore bodies in sandstones
N. SEGOVIA, M. MENA and E. TAMEZ	435	Radon monitoring related to a subduction zone in Mexico
N. SEGOVIA, E. TAMEZ, JP. MORIN, M. MONNIN and JL. SEIDEL	441	Recommendations for the setting up of a radon in soil network based upon a decennial study
N. Segovia, P. Peña, F. Mireles, I. Davila and L. Quirino	445	Radon concentration levels in dwellings and mine atmospheres in Mexico
SHEN BAO-MING, CHEN RUI-HUA, WANG QING-ZHI AND GAO XING	449	Application of CR-39 solid-state nuclear track detectors to radon survey in the mine cities of inner Mongolia
SHANG BING	451	CR-39 radon detector
B. SINGH, S. SINGH and H. S. VIRK	455	Radon diffusion studies in air, gravel, sand, soil and water
B. SINGH, S. SINGH and H. S. VIRK	459	Earthquake prediction studies in Kangra Valley using plastic track recorders
Sun Zhongtian, Hu Guoju, Li Airong, Pan Xianjia, Yun Yujuan and Lu Zuhui	461	Radon distribution measurement of Lugo coalmine by CSR track detection
H. SURBECK	463	Radon monitoring in soils and water
L. Tavera, M. Balcazar, R. Villalobos-Pietrini, M. E. De La Rosa, M. Breña and M. E. Camacho	469	Radon chamber for biological treatment
TIAN ZHIHENG, XIAO DETAO and ZO FUQI	475	Fast and multifunctional method of radon measurement using track detector
M. Tufail, Matiullah, N. Ahmad, S. L. Guo, E. U. Khan and A. Bashir	479	Estimation of internal and external equivalent dose rates for dwellers of Dera Ismail Khan, Pakistan
H. S. Virk	483	Radon and earthquake prediction in India: present status
WANG HUANQIANG	495	Turbidimetry for measurement of radon concentration
YANG YURONG and ZHU ZIQIANG	499	Radon measurement in seismological research
G. YAPRAK and S. KINACI	505	Measurements of Rn-222 concentrations in dwellings in a city with high population
ZHAI PENGJI and ZHAO YUNLONG	509	The effect of water used in toilets on indoor radon level
HUAIQIN ZHANG and LING CHEN	511	Radon-222 indoor concentration in the CIAE region of Beijing
ZHANG ZHENGGUO, ZHANG LIANG, LI CHUNXIU and XIAO DETAO	515	Investigation of distribution of indoor radon concentration
ZHANG ZHENGGUO, ZHANG LIANG and LI CHUNXIU	519	Determination of indoor and outdoor radon concentration using CSR detector
ZHAO YU-HUA, ZHAO CHONG-DE, HAO XIU-HONG, ZHOU PEI-DE and GUO SHI-LUN	523	Measurement of indoor radon concentration by CR-39
	NUC	CLEAR PHYSICS
M. Ahmed, H. A. Khan, N. A. Khan and M. A. Chaudri	529	Observation of multiprong events in the interaction of 8.5 MeV/u Pb^{208} with Pb (natural)
R. Antanasijevic, D. Sevic, A. Zaric, I. Lakicevic, S. Popovic, J. Vukovic, Dj. Konjevic, J. Puric and M. Cuk	535	Measurement of fluences and energies of D^+ emitted from the plasma focus in capacitor bank energy interval of 1-20 kJ
R. Brandt, B. Bisplinghoff, G. Haase, M. Heck, S. Heise, Th. Schmidt, M. I. Krivopustov, A. N. Sosnin, E. J. Langrock, M. Rommel, S. L. Guo, H. H. Cui, H. A. Khan, M. I. Shahzad, K. K. Dwivedi and G. Unger	537	Wide angle emission of heavy fragments in relativistic heavy ion collisions and some open problems

Cai Xu	547	Digital controlled measurement and three dimensional reconstruction of particle tracks in emulsion chamber of CERN/EMU01 experiment
F. Castillo, J. J. E. Herrera and G. Espinosa	551	Energy study of accelerated ions from a dense plasma focus by means of CR-39 track detector
S. CECCHINI, H. DEKHISSI, G. GIACOMELLI, E. KATSAVOUNIDIS, A. R. MARGIOTTA, L. PATRIZII, F. PREDIERI, P. SERRA and M. SPURIO	555	Calibration of the Intercast CR39
D. CHULTEM, TS. DAMDINSUREN, L. ENKH-GIN, L. LOMOVA, V. PERELYGIN and K. TOLSTOV	559	The relativistic nuclei beam monitoring by means of high threshold fission chamber
Cui Huanhua, Ke Wei, Zhou Jian, Lu Weichun and R. Brandt	561	Study of the interaction of 960 MeV/N $^{238}\mathrm{U}$ ions with light nuclei
Cui Huanhua, R. Brandt, V. S. Butsev, M. Heck, S. Heise, M. I. Krivopustov, B. A. Kulankov, E. J. Langrock and P. Vater	565	Study of the high energy heavy fragments from the interaction of 3.65 GeV/N $^{19}\mathrm{F}$ and Cu
M. Debeauvais, J. Ralarosy, J. C. Adloff, M. Zamani, F. Fernandez, S. Savovic and S. Jokic	571	Application of SSNTD in nuclear physics and especially to the reaction $^{238}U+Ag$ at 15 MeV/n
K. K. Dwivedi, J. Raju, P. Vater and R. Brandt	577	Studies on the fission of heavy ions and particle evaporation using nuclear track detectors
B. Grabež	583	Target fragmentation in 3.65 GeV $^{12}C + ^{208}Pb$ reaction
WEN-SHENG HAN and SHI-LUN GUO	587	Study of range-energy relation of ²⁸ Si heavy ions in Tuffak polycarbonate track detector
R. Ilić, T. Šutej, J. Skvarč, M. Krčmar, A. Ljubičić, S. Kaučić and M. Fujii	591	Etched track detectors in solar neutrino experiments
XING-ZHONG LI, DA-WEI MO, LI ZHANG, SHI-CHENG WANG, TIE-SUN KANG, S. J. LIU and J. WANG	599	Anomalous nuclear phenomena and solid state nuclear track detector
S. Manzoor, I. E. Qureshi, M. I. Shahzad, H. A. Khan and M.S. Zafar	605	Interaction of 15.9 MeV/u 197 Au ions with $^{\rm nat}$ Au and 299 Bi as targets on CR-39 plastic track detectors
J. RAJU and K. K. DWIVEDI	609	Fusion-fission of ²³⁸ U and ²⁰⁹ Bi in different SSNTDs
REN GUOXIAO and JING GUIRU	613	Behavior of 200 AGeV ^{32}S and fragments in collisions with Cu target
M. S. SARTORI	615	An electromagnetic dissociation study in CR39 and in emulsion
M. I. Shahzad, I. E. Qureshi, S. Manzoor, U. K. Chaudhary and H. A. Khan	619	Study of multiprong events in the interaction of 16.7 MeV/u $^{238}\rm U$ with $^{nat}\rm Au$ using mica and CR-39 track detectors
S. Tretyakova, M. Lewitowicz, C. Borcea, Z. Dlouhy, A. Golovchenko, S. Lukyanov, Yu. Penionzhkevich, V. Ponomarenko, N. Skobelev, I. Svanda and T. Tretyakova	623	The use of CR-39 plastic detectors for investigation of elastic scattering of exotic nuclei
ZHANG DONGHAI	629	The mean free path of alpha projectile fragments from $^{16}\mbox{O-Em}$ at 60 A GeV
ZHOU PEI-DE, GUO SHI-LUN, R. BRANDT and P. VATER	633	Study of $14.2 \text{ MeV/N}^{238} \text{U} + ^{\text{nat}} \text{U}$ heavy ion reaction using muscovite mica track detector
	UTRO	ON MEASUREMENTS
D. Azimi-Garakani	639	Energy response and linearity of electrochemically etched PADC
M. BALCAZAR, A. DELFIN, M. E. CAMACHO, R. MAZON, L. TAVERA and G. PIÑA	643	Neutron spectra profile in beam ports of a Triga Mark III experimental reactor

CHEN SHAONENG and LI DEJIANG	651	Measurement of energy spectrum parameters in MNSR irradiation site by solid track method-dual foil method
D. Chultem, Ts. Damdinsuren, L. Enkh-Gin, L. Lomova, V. Perelygin and K. Tolstov	657	The space distribution of neutrons generated in massive lead target by relativistic nuclear beam
SHI-LUN GUO	659	Latest development of nuclear track study in China Institute of Atomic Energy
M. Luszik-Bhadra and E. Dietz	669	Reactor beam profile measurements with electrochemically etched track detectors
M. Luszik-Bhadra, W. G. Alberts, E. Dietz, S. Guldbakke and M. Matzke	671	A wide-range neutron dosemeter based on a CR-39 track detector
A. Majeed, S. M. Ahmad and S. A. Durrani	675	Neutron spectrum measurements using electrochemically etched CR-39—spectrum unfolding
A. Majeed, F. Humayun, S. M. Ahmad and S. A. Durrani	679	A simple technique to discriminate various charged particles using SSNTDs
MATIULLAH, K. KUDO and X. YANG	683	Calibration of various types of neutron dosimeters in a heavy water moderated and monoenergetic neutron fields—I. Theoretical
MATIULLAH, K. KUDO and X. YANG	687	Calibration of various types of neutron dosimeters in a heavy water moderated and monoenergetic neutron fields—II. Experimental
MATIULLAH, K. KUDO, A. BASHIR and X. YANG	691	Experience with gamma and BD-100R neutron bubble detectors
T. RASHID, MATIULLAH, M. GUL, X. YANG and A. BASHIR	695	Reassessment of the CR-39 based cubical neutron dosimeter
SHI YONGQIAN	699	Reactor power measurement by SSNTD
R. J. TANNER, D. T. BARTLETT and J. D. STEELE	703	NRPB PADC neutron personal dosimetry after ICRP 60
L. TOMMASINO	707	Importance of track detectors in radiation dosimetry
L. Tommasino, G. Torri, M. Cavaioli, M. Riccardi and Trinh van Giap	719	A long-term study of CR-39 detectors for neutron dosimetry
	SPA	CE RESEARCH
HUANG RONGQING	725	Measurement of cosmic ray heavy nuclei intensity in satellite cabin
N. N. KOROTKOVA and L. L. KASHKAROV	727	Track parameters in the Kaidun meteorite glasses: application to its radiation-thermal history
K. Oda, I. Csige, T. Yamauchi, H. Miyake and E. V. Benton	729	Incident angle dependence of proton response of CR-39 (TS-16) track detector
K. Ogura, T. Doke, T. Kasuya, K. Kuwahara, M. Matsushima, S. Nagaoka, H. Ohnishi, T. Takahashi, H. Yamada and F. Yatagai	733	Determination of high LET cosmic particles' trajectories for space radiobiological studies
C. Perron	739	Cosmic ray-induced spallation recoil tracks in meteoritic phosphates: simulation at the CERN synchrocyclotron
C. Perron and M. Bourot-Denise	745	²⁴ Pu fission tracks in micro-inclusions in metal of chondritic meteorites
P. Y. ZHENG AND CHINESE HIGH ENERGY EMULSION COLLABORATION, J. P. GOA, S. R. HAN, J. T. HE, G. C. LIN, J. F. SUN, S. R. SUN, X. W. TANG, J. W. XI, C. J. WANG, R. F. XU, Z. C. XU, C. M. YANG, Y. P. ZHANG and Z. P. ZHENG	747	Study of nuclear tracks in emulsion carried by Chinese satellite

GEOSCIENCE, DATING

H. Afarideh, M. Faghih Habibi, F. Hashemi 753 Uranium content and age determination of various minerals of Iran and F. Shokouhi

G. Bigazzi, T. Ercan, M. Oddone, M. Özdoğan and Z. Yeğingil	757	Application of fission track dating to archaeometry: provenance studies of prehistoric obsidian artifacts
A. CHAMBAUDET, J. C. MIELLOU, H. IGLI, M. REBETEZ and M. GRIVET	763	Thermochronology by fission tracks: an exact inverse method associated with the resolution of a single ordinary differential equation (ODE)
DENG XINLU	773	Computer simulation of the etching process of the fission track
N. L. Grigorov, D. A. Zhuravlyov, M. A. Kondratyeva, A. V. Podgurskaya, Ch. A. Tretyakova and S. P. Tretyakova	777	Anomalous oxygen in the near-earth space in 1985-1991
M. GRIVET, M. REBETEZ, A. CHAMBAUDET and N. BEN GHOUMA	779	Electron microscopy analysis of krypton ion tracks induced in Durango apatite
JING GUIRU, WANG SHICHENG and KANG TIESHENG	783	Thermal history significance of apatite fission track length distributions and ages
S. Koshimizu	785	Comparison of thermal stability between internal and external surfaces of zircon
Hu Ruiying, Cheng Jingping, Guo Shilun and Hao Xiuhong	789	Fission track dating of quartz
Shun-Sheng Liu	793	Fission track dating of Hongkong granites by comparison method with standard age samples
Lu Zuhui, Xu Aijun, Chen Dongrong, Wang Yujin, Li Youming, Guo Shilun, Hao Xiouhong, Guan Baode and Tao Ziqiang	797	Determination of the end time of the intensive geological thermal process in Luanchuan Group by fission track dating
A. F. M. Nor, Y. M. Amin, R. Mahat and B. Kamaluddin	801	Effects of radiation damage on infra-red and thermoluminescence properties of natural apatites
I. G. Abdullaev, G. G. Bankova, L. Enchjin, Kh. Murtazaev, O. Otgonsuren, V. P. Perelygin and R. I. Petrova	805	On the determination of the track age of some natural crystals
V. P. PERELYGIN	811	The study of nuclear tracks in crystals
V. P. Perelygin and S. G. Stetsenko	823	On the determination of bismuth concentration in specimens by an alpha-activation technique
S. SINGH, L. SINGH and H. S. VIRK	827	Correction methods in fission track dating
I. E. VLASOVA	831	Growth rates of the ferromanganese nodules obtained by the cellulose nitrate detector LR-115
S. C. WANG, T. S. KANG and G. R. JING	835	Recent progress in fission track analysis and its applications in China
S. C. WANG and T. S. KANG	843	A study of standardization of fission track dating
LIFE AND ENVI	RONM	IENTAL SCIENCE, RADIOGRAPHY
I. Badr and S. A. Durrani		Alpha activity measurements of biological samples from areas around the site of the Chernobyl nuclear disaster using the SSNTD technique
B. S. Bajwa, N. P. Singh and H. S. Virk	851	Estimation of uranium and thorium in Siwalik fossil bones
Y. L. CHENG, J. Y. LIN and X. H. HAO	853	Trace uranium determination in beverages and mineral water using fission track techniques
M. Cucu, A. Danis, M. Ciubotariu, E. Iancu and G. Dumitrescu	857	On the uranium biodistribution in internal contamination
A. Danis, M. Cucu, M. Ciubotariu and D. Dorcioman	861	The track detection use in internal contamination investigation
M. A. El-Fiki, S. A. El-Fiki, M. A. Sharaf, H. M. Eissa and G. M. Hassan	863	Autoradiographic measurements of low concentration of alpha active nucleides using CR-39 track detector

A. GOLOVCHENKO, S. TRETYAKOVA, R. ANNE,	867	members of the descripted about the fire beam and its indemnis
C. TOSTAIN, G. TOUSSET, R. BIMBOT, F. CLAPIER, B. KUBICA and C. BORCEA		produced in interactions with tissue-equivalent materials
V. P. PERELYGIN and Yu. T. CHUBURKOV	869	On the determination of low Pu content in the environment
G. Streubel, B. Dörschel, H. Hartmann, K. Kadner, P. Rößler and M. Luszik-Bhadra	873	Neutron dosimetry by means of chemically etched CR-39 material PATRAS
CHING-SHEN SU	877	Alpha particle radiography of small insects
N. N. VICTOROVA, V. V. DEMCHUK, E. V. GANGA, S. P. TRETYAKOVA and A. N. GOLOVCHENKO	885	Nondestructive control of Chernobyl hot particles behavior and migration of radionuclides in soil-plant system
A. Waheed, A. Majeed, F. Cera, P. Tiveron, R. Cherubini, G. Moschini and E. U. Khan	889	Use of track detectors in biomedical sciences
Jiaqi Wang, Furon Wu, Jianxing Zhao, Fang Wu, Jianhuan Zhu and Yuanfang Li	893	A TLD reader based on single chip microprocessor
FILTERS, MATERIA	LS SC	CIENCE AND OTHER APPLICATIONS
R. B. Akbari	899	The physical properties of the LiF-Teflon (TL) dosemeters
A. Danis, D. Dorcioman and M. Ciubotariu	903	On the radiocolloidal and pseudoradiocolloidal state of the fissionable element solutions
A. Danis	905	On the adherence of uranium to the walls of the solution vessels
M. DEY, J. RAJU, S. GHOSH and K. K. DWIVEDI	907	Development and characterization of polycarbonate microfilters
S. Heise, P. Vater, R. Brandt, K. K. Dwivedi and C. Dankmeyer	909	On the development of polypropylene (PP) microfilters
G. Hussain, A. A. Qureshi, H. A. Khan and M. S. Zafar	911	Diffusion of radon through nuclear track microfilters
G. Hussain, H. A. Khan and M. S. Zafar	917	Thermal stability of pores in nuclear track microfilters
K. Ogura, T. Hattori, T. Naito, K. Nakano and T. Takahashi	921	Application of the pre-soaking effects to the production of CR-39 microfilters
P. Vater, C. Laue, I. Jacobs, S. Heise, H. Jiang, R. Brandt, J. Roesch and J. Haag	923	New achievements in industrial applications of nuclear track microfilters
RISHENG Wu and JIANHUAN ZHU	933	A nuclear track microporous membrane (NTMM)
RISHENG WU, JIAN ZHOU and WEI KE	937	Application of new nuclear track microporous membrane in trans- dermal therapeutic system (TTS)
CD. Zhao, SL. Guo, P. Vater and R. Brandt	941	PVDF nuclear track membrane
S. A. Durrani	949	Concluding remarks
Author Index	I	

Keyword Index